

## **REMARKS**

Reconsideration of this application, as amended, is requested.

Claims 1-6, 8, 10-16, 18 and 20 remain in the application. Claim 1 has been amended to incorporate the limitations of claims 7 and 9. Accordingly, claims 7 and 9 have been canceled. Claim 11 has been amended to incorporate the limitations of claims 17 and 19. Accordingly, claims 17 and 19 have been canceled as well. Dependent claims 8, 10, 18 and 20 have been amended to achieve proper dependency.

The Examiner objected to the drawings because they did not show the cam surface formed only on the groove as set forth in original claims 3 and 13.

This Amendment is submitted with a new FIG. 13 to ensure that the subject matter defined in original claims 3 and 13 has proper support in the figures. Minor changes to the specification have been entered to refer to new FIG. 13. It is submitted that the features illustrated in new FIG. 13 have adequate support in the original specification. Accordingly, the amendment to add new FIG. 13 does not constitute new matter.

The Examiner noted a typographical mistake in paragraph 0032 of the specification. The specification has been corrected in view of the Examiner's helpful comment. Similar typographical mistakes were noted in paragraphs 0034 and 0045-0047. Thus, these paragraphs have been corrected.

The claims were rejected in view of a phrase in each of the independent claims that the Examiner concluded was imprecise and misleading. The amended claims are believed to address this rejection under 35 USC 112, second paragraph.

Claims 1-4, 6-14 and 16-20 were rejected under 35 USC 103 as being obvious over Takahashi, (JP 2000-2270) considered in view of Heimann (U.S. Patent No.

2,597,787). Claims 1, 2, 4-12 and 14-20 were rejected under 35 USC 103(a) as being obvious over Takahashi considered in view of Heimann et al. (U.S. Patent No. 2,544,631). In both of these rejections, the Examiner noted that Takahashi is a pulsation dampening apparatus with a housing that has a dampening chamber and a dampening assembly accommodated in the housing including a working unit 24, 27 and a retainer 29. In both of these rejections, the Examiner acknowledged that Takahashi is not an elastic retainer acting in conjunction with a force conversion mechanism. Thus, for both of these rejections, the Examiner turned to secondary references in an effort to address the acknowledged deficiencies of Takahashi.

The Takahashi reference relied upon by the Examiner is assigned to the assignee of the subject invention and was brought to the attention of the Examiner in the Information Disclosure Statement filed with this application. Additionally, the Takahashi reference is described in considerable detail in paragraph 0010-0014 of the subject application and is illustrated in FIGS. 2 and 3 of the subject application. As noted in paragraphs 0013 and 0014, the vibration dampening disc 154 is held in the disc body 152 by a disc 155. The disc 155 is held in a fixed position in the body 152 by caulking over the bottom end of the body 152 to define a flange 156. This caulking process is conducted by a press machine, and as a result, the body 152 must be formed from a material that is deformable for caulking. This deformable material may not be the ideal material for forming the entire housing. As a result, the housing shown in Takahashi is made of two parts 129, 150 as shown most clearly in FIG. 3 of the subject application. Additionally, the element 31 shown in the Takahashi reference between the discs 24 and 26 is a coil that engages the discs 24 and 26 at a plurality of radially different positions inward from the

outer peripheries of the discs 24 and 26. The coil 31, therefore, impedes deformation of the central parts of the disc 24. The Takahashi coil 31 was employed to address a problem considered in the prior art of Takahashi. In particular, the admitted prior art of Takahashi described a circular fulcrum rigidly held in the housing. However, the admitted prior art of Takahashi was considered to permit too much deflection of central parts of the vibration dampening disc. Thus, Takahashi invented the coil 31 to limit deflection of the central parts of the vibration dampening disc. The assignee of the subject invention has provided the undersigned U.S. counsel with a partial translation of the portion of Takahashi that discusses the admitted prior art. That partial translation is attached to the Information Disclosure Statement submitted with this Amendment.

The Examiner appears to have appreciated some of the limitations of Takahashi presented above. As a result, the Examiner turned to the Heimann and Heimann et al. references in an effort to overcome these deficiencies. These secondary references relate to the use of a tapered split ring to hold a gear on a drive shaft or in the bore of a housing. The tapered split ring was considered to account for manufacturing tolerances in the dimensions of the gear.

It is not at all clear to counsel or the applicant that a person skilled in the art of designing the dampening chamber of a hydraulic circuit would turn to the very old prior art Heimann or Heimann et al. devices for fixing a gear on a shaft or in the bore of a housing. In any event, the hypothetical combination of Takahashi and Heimann or Heimann et al. does not suggest the invention defined by the amended claims herein. In this regard, Takahashi employs a coil 31 on the side of the dampening disc 24 opposite the dampening chamber 23. The Takahashi coil 31 avoids problems of excessive

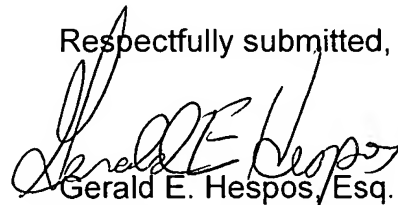
deformation of the dampening disc 24. Vibration dampening<sup>g</sup> deflections of the disc 24 are limited by inner parts of the coil 31. However, the coil 31 must be held in place by caulking the housing. The Takahashi admitted prior art has a circular fulcrum held in place by caulking the housing. Therefore, Takahashi and its admitted prior art follow the conventional wisdom of a fixed fulcrum. The Heimann and Heimann et al. references have nothing to do with a fulcrum, but show a fixed positioning of a gear or the like on a shaft or on a housing.

In contrast, the invention defined by the amended claims has "a circular fulcrum at an outer periphery of the vibration dampening member and on a side of the vibration dampening member opposite the dampening chamber so that portions of the vibration dampening member inward of the outer periphery can deform into areas inward of the circular fulcrum." Additionally, the claimed invention employs the "force conversion mechanism which converts a spring back force of the elastic retainer in said pre-loaded state to urge the circular fulcrum of the working unit elastically against the vibration dampening member and towards the dampening chamber." Thus, the claimed force conversion mechanism enables the fulcrum to be supported elastically in the housing for movement towards and away from the dampening chamber, but biased towards the dampening chamber. Accordingly, the claimed invention uses the elastically supported fulcrum to permit some axial movement of the fulcrum and to thereby avoid excessive deformation of the vibration dampening member. Counsel is unaware of any references in this technology area with an elastically supported fulcrum. The Takahashi fulcrum and the Takahashi admitted prior art fulcrum both are supported rigidly. The Heimann and Heimann et al. references have no fulcrums and merely provide the illustrated split ring to

accommodate gears of different dimensions in view of manufacturing tolerances. The claimed dampening apparatus that urges the circular fulcrum elastically against the vibration dampening member is believed to be novel and unobvious over the prior art.

It is submitted that the invention defined by the amended claims is patentable over the hypothetical combination of references relied upon in the office action. The Examiner is urged to contact applicant's attorney at the number below to expedite the prosecution of this application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Gerald E. Hespos", is written over the printed name.

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